



>>Entry Name: Rubidium phosphate (Rb(H₂PO₄))

Synonym(s): Monorubidium phosphate, 9Cl, 8Cl. Rubidium dihydrogenphosphate

CAS Registry Number: 13774-16-8

Rb(H₂PO₄)

Molecular Formula: H₂O₄PRb

Molecular Weight: 182.455

Accurate Mass: 181.880866

Percentage Composition: H 1.10%; O 35.08%; P 16.98%; Rb 46.84%

Source/Synthesis: Obt. from Rb₂CO₃ + H₃PO₄; or from RbCl by ion-exchange

Melting Point: Mp 283°

Solubility: Sol. H₂O (43 g per 100 cm³ at 0°, 78.7 g per 100 cm³ at 25°, 123.6 g per 100 cm³ at 50°, 163.9 g per 100 cm³ at 80°)

Aldrich: 43596-1

>>Variant: I-form

Molecular Formula: H₂O₄PRb

Molecular Weight: 182.455

Accurate Mass: 181.880866

Percentage Composition: H 1.10%; O 35.08%; P 16.98%; Rb 46.84%

Other Data: Ferroelectric phase stable between –273° and –126° when → phase II

>>Variant: II-form

Molecular Formula: H₂O₄PRb

Molecular Weight: 182.455

Accurate Mass: 181.880866

Percentage Composition: H 1.10%; O 35.08%; P 16.98%; Rb 46.84%

Use/Importance: Superior to KH₂PO₄ in some non-linear props.

Other Data: Paraelectric phase stable between –126° and 86°, when → phase III with changes in H-bonding

>>Variant: III-form

Molecular Formula: H₂O₄PRb

Molecular Weight: 182.455

Accurate Mass: 181.880866

Percentage Composition: H 1.10%; O 35.08%; P 16.98%; Rb 46.84%

Source/Synthesis: Obt. by hydrolysis of the cyclotetrametaphosphate

Other Data: Struct. stable at 86°+, and remains on cooling to r.t. when metastable

References:

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